

Amendments To The Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claim 1. (Currently Amended) A process for producing a thin film of an I-III-VI₂, compound of an element from each of Groups I and III of the Periodic Table with two atoms of a Group VI element, comprising:

(i) forming a thin film of an III-VI compound on a substrate by Metal Organic Chemical Vapor Deposition employing a single precursor containing elements of Groups III and VI;

(ii) forming a thin film of an I₂-VI compound on the thin film of the III-VI compound by Metal Organic Chemical Vapor Deposition employing a precursor containing at least one metal of Group I; and

(iii) forming a thin film of the I-III-VI₂ compound on the thin film of the I₂-VI compound by Metal Organic Chemical Vapor Deposition employing a single precursor containing elements of Groups III and VI,

wherein, in the steps of the process, the element of Group I is Cu or Ag, the element of Group III is at least one of Al, Ga or In, and the element of Group VI is at least one of S, Se or Te.

Claim 2. (Previously Presented) The process as set forth in claim 1, further comprising:

(iv) forming a thin film of an I-III-VI₂ compound on the thin film of the I-III-VI₂ compound formed in (iii) by Metal Organic Chemical Vapor Deposition employing a single precursor containing elements of Groups III and VI, and wherein elements of Group III employed in (iv) are different from those employed in (i) and (iii).

Claim 3. (Currently Amended) The process as set forth in claim 1, further comprising:

(iv) forming a thin film of an I-III-VI₂ compound on the thin film of the I-III-VI₂ compound formed in ~~(III)~~ (iii) by Metal Organic Chemical Vapor Deposition employing a single precursor containing elements of Groups III and VI, and wherein elements of Group VI employed in (iv) are different from those employed in (i) and (iii).

Claim 4. (Previously Presented) The process as set forth in any one of claims 1 through 3, wherein the precursors of (i) and (ii) are [Me₂In-(μSeMe)]₂.

Claim 5. (Previously Presented) The process as set forth in any one of claims 1 through 3, wherein the precursor employed in (ii) is (hfac)Cu(DMB).

Claim 6. (Previously Presented) The process as set forth in claim 2, wherein the precursor of (iv) is [Me₂Ga-(μSeMe)]₂.

Claim 7. (Previously Presented) The process as set forth in claim 2, wherein the thin film of a compound symbolized by the formula: Group I-Group III-Group VI₂ is selected from the group consisting of CuIn_{1-x}Ga_xSe₂, CuIn_{1-x}Al_xSe₂, CuGa_{1-x}Al_xSe₂, AgIn_{1-x}Ga_xSe₂, AgIn_{1-x}Al_xSe₂ and AgIn_{1-x}Ga_xSe₂, wherein x ranges from 0 to 1.

Claim 8. (Original) The process as set forth in claim 3, wherein the thin film of an I-III-VI₂ compound is selected from the group consisting of CuIn(Se,S)₂, CuGa(Se,S)₂, AgIn(Se,S)₂, AgGa(Se,S)₂, CuIn(Se,Te)₂, CuGa(Se,Te)₂, AgIn(Se,Te)₂, AgGa(Se,Te)₂, CuIn(S,Te)₂, CuGa(S,Te)₂, AgIn(S,Te)₂ and AgGa(S,Te)₂.

Claim 9. (Previously Presented) A process for producing an absorption layer for a solar cell, comprising:

forming a thin film of InSe on a substrate by Metal Organic Chemical Vapor Deposition employing a single precursor containing In and Se;

forming a thin film of Cu₂Se on the InSe thin film by Metal Organic Chemical Vapor Deposition employing a Cu precursor; and

forming a thin film of CuInSe₂ on the Cu₂Se thin film by Metal Organic Chemical Vapor Deposition employing a single precursor containing In and Se.

Claim 10. (Previously Presented) The process as set forth in claim 9, further comprising:

forming a thin film of CuIn_{1-x}Ga_xSe₂, wherein x ranges from 0 to 1, on the thin film of CuInSe₂ by Metal Organic Chemical Vapor Deposition employing a single precursor containing Ga and Se.